

What is claimed:

1. An assembly for effecting the condition of a mitral valve annulus of a heart comprising:

5           a mitral valve therapy device that reshapes the mitral valve annulus of the heart when placed within the coronary sinus of the heart adjacent the mitral valve annulus, the mitral valve therapy device having a proximal end including a coupling structure;

10           a catheter having a lumen that directs the mitral valve therapy device into the coronary sinus of the heart;

          a second coupling structure that is lockable on the device coupling structure; and

15           a locking member that locks the device coupling structure to the second coupling structure and that releases the device coupling structure from the second coupling structure.

2. The assembly of claim 1 further including a pusher  
20 member that pushes the device through the catheter lumen, the pusher member having a distal end that engages the device proximal end.

3. The assembly of claim 2 wherein the pusher member  
25 carries the second coupling structure at the distal end of the pusher member.

4. The assembly of claim 1 wherein the device coupling structure comprises a hoop structure.

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5. The assembly of claim 4 wherein the second coupling structure comprises a hoop structure.

6. The assembly of claim 5 wherein the locking member  
5 comprises a pin that extends through the hoop structures to lock the coupling structures together and that is retractable to release the hoop structures.

7. The assembly of claim 6 wherein the catheter has a  
10 distal end and wherein the pin is elongated and extends through the distal end of the catheter.

8. The assembly of claim 6 further comprising a pusher member having a lumen and that pushes the device through the  
15 catheter lumen, the pusher member having a distal end that engages the device proximal end, a proximal end, and a lumen, and wherein the pin is elongated and extends through the pusher member lumen and out the pusher member proximal end.

20 9. The assembly of claim 8 wherein the pusher member is an elongated coil.

10. The assembly of claim 1 wherein the device coupling structure and the second coupling structure comprise a pair of  
25 interlocking structures and wherein the locking member comprises a slide-lock sheath closely fitted to the interlocking structures.

11. The assembly of claim 10 wherein the interlocking  
30 structures are formed from tubing and wherein the slide-lock sheath is tubular.

12. The assembly of claim 10 further including a pusher member that pushes the device through the catheter lumen, the pusher member having a distal end that engages the device proximal end, and wherein the pusher member carries the second coupling structure at the distal end of the pusher member.

13. The assembly of claim 12 wherein the locking member further comprises a tether that extends from the slide-lock sheath to and through the catheter lumen to permit the tether to pull proximally on the slide-lock sheath for releasing the interlocking structures.

14. The assembly of claim 1 further comprising a retractor configured to extend through the catheter lumen and grip the device coupler to permit retraction of the device through the catheter.

15. The assembly of claim 14 further comprising a pusher member configured to extend through the catheter lumen and that pushes the device through the catheter lumen, the pusher member having a lumen and a distal end adapted to engage the device proximal end, and wherein the retractor is configured to extend down the pusher lumen to engage the device coupler.

16. An assembly for effecting the condition of a mitral valve annulus of a heart comprising:

device means for reshaping the mitral valve annulus of the heart when placed within the coronary sinus of the heart adjacent the mitral valve annulus, the device means

having a proximal end including a coupling means for coupling the device means;

catheter means having a lumen that directs the mitral valve therapy device into the coronary sinus of the heart;

5 second coupling means for locking with the device coupling means; and

locking means for locking the device coupling means to the second coupling means and releasing the device coupling means from the second coupling means.

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17. The assembly of claim 16 further comprising a pusher means for pushing the device means through the catheter means lumen, the pusher means having a lumen, and wherein the second coupling means and the locking means extend through the pusher means lumen.

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18. The assembly of claim 16 wherein the device coupling means and the second coupling means comprise interlocking means for releasably locking the device coupling means and the second coupling means, and wherein the locking means includes retaining means for retaining the interlocking means in an interlocked condition.

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19. The assembly of claim 18 wherein the retaining means is displaceable for releasing the interlocked condition of the interlocking means.

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20. The assembly of claim 16 further comprising retracting means for engaging the device coupling means and removing the device means from the coronary sinus.

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21. A method of effecting the condition of a mitral valve annulus of a heart, the method comprising the steps of:

feeding a catheter having a lumen into the coronary sinus of the heart;

5 aligning a mitral valve therapy device coupler of a mitral valve therapy device to a deployment member coupler;

locking the device coupler to the deployment member coupler with a locking member;

10 directing the mitral valve therapy device through the catheter lumen into the coronary sinus with the deployment member;

positioning the mitral valve therapy device in the coronary sinus with the deployment member;

15 releasing the locking member from the device coupler and the deployment member coupler;

removing the deployment member, the deployment member coupler and the locking member from the catheter lumen; and removing the catheter from the coronary sinus.

20 22. The method of claim 21 comprising the additional steps of:

evaluating a condition of the mitral valve following the first recited removing step;

25 based upon results of the evaluation, feeding a device retractor through the catheter lumen;

capturing the device coupler with the retractor; and removing the device from the coronary sinus through the catheter with the retractor.

23. A method of implanting a mitral valve therapy device to effect the condition of a mitral valve annulus of a heart, the method comprising the steps of:

5       feeding a catheter having a lumen into the coronary sinus of the heart;

      locking the device to a deployment member with a locking member;

10       directing the mitral valve therapy device through the catheter lumen into the coronary sinus with the deployment member;

      positioning the mitral valve therapy device in the coronary sinus with the deployment member;

      releasing the locking member from the device and the deployment member coupler;

15       removing the deployment member and the locking member from the catheter lumen; and

      removing the catheter from the coronary sinus.

20 24. The method of claim 23 comprising the additional steps of:

      evaluating a condition of the mitral valve following the first recited removing step;

      based upon results of the evaluation, feeding a device retractor through the catheter lumen;

25       capturing the device with the retractor; and

      removing the device from the coronary sinus through the catheter with the retractor.

30 25. An assembly for effecting the condition of a mitral valve annulus of a heart comprising:

5 a mitral valve therapy device that reshapes the mitral valve annulus of the heart when placed within the coronary sinus of the heart adjacent the mitral valve annulus, the mitral valve therapy device having a proximal end including a coupling structure;

a guide member that directs the mitral valve therapy device into the coronary sinus of the heart;

a second coupling structure that is lockable on the device coupling structure; and

10 a locking member that locks the device coupling structure to the second coupling structure and that releases the device coupling structure from the second coupling structure.

15 26. An assembly for effecting the condition of a mitral valve annulus of a heart comprising:

20 device means for reshaping the mitral valve annulus of the heart when placed within the coronary sinus of the heart adjacent the mitral valve annulus, the device means having a proximal end including a coupling means for coupling the device means;

guide means for directing the mitral valve therapy device into the coronary sinus of the heart;

25 second coupling means for locking with the device coupling means; and

locking means for locking the device coupling means to the second coupling means and releasing the device coupling means from the second coupling means.

27. A method of implanting a mitral valve therapy device to effect the condition of a mitral valve annulus of a heart, the method comprising the steps of:

5       feeding a guide member into the coronary sinus of the heart;

          locking the device to a deployment member with a locking member;

10       directing the mitral valve therapy device along the guide member into the coronary sinus with the deployment member;

          positioning the mitral valve therapy device in the coronary sinus with the deployment member;

          releasing the locking member from the device and the deployment member coupler; and

15       removing the deployment member, the locking member, and the guide member from the coronary sinus.